

Application No. 09/867,303
Amendment "B" dated May 12, 2005
Reply to Office Action mailed February 8, 2005

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-26. (Cancelled).
27. (New) A generic user control point tool for discovering, controlling, and displaying Universal Plug and Play (UPnP) devices on a system, the generic user control point tool comprising:
- a user interface that displays, in a first window, a plurality of selectable search type options that correspond to different types of searches for discovering UPnP devices on the system, wherein in response to user selection of any of the selectable search type options, the generic user control point tool collects UPnP device information that is displayed as a list of selectable UPnP devices at the user interface.
28. (New) A generic user control point tool as recited in claim 27, wherein the plurality of selectable search type options include a find by type search option for searching by type of UPnP device, a find by unique device name (UDN) search option for finding UPnP devices by unique name and an asynchronous search option for finding all UPnP compliant devices on the system.
29. (New) A generic user control point tool as recited in claim 27, wherein the user interface further displays a start discovery button that must be selected prior to initiating discovery according to a selected search type option.

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30. (New) A generic user control point tool as recited in claim 27, wherein the generic user control point tool collects UPnP device information in response to sending a multicast discovery message to UPnP devices that the UPnP devices respond to when any embedded devices or services of the UPnP devices match search criteria included in the multicast discovery message.

31. (New) A generic user control point tool as recited in claim 27, wherein the selectable list of UPnP devices is displayed in a pull-down list.

32. (New) A generic user control point tool as recited in claim 27, wherein the user interface also displays a selectable properties button corresponding to properties of the selectable UPnP devices, and wherein the generic user control point tool obtains and displays properties corresponding to a selected UPnP device when the selected UPnP device is selected from the list and when the selectable properties button is selected.

33. (New) A generic user control point tool as recited in claim 32, wherein the generic user control point tool displays the properties in a separate window from the first window.

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34. (New) A generic user control point tool as recited in claim 32, wherein the user interface also displays a list of services available to the selected UPnP device, when the selectable properties button is selected, and wherein the user interface displays a URL to a service description document in a field of the user interface when information is available for the services of the selected UPnP device in the service description document.

35. (New) A generic user control point tool as recited in claim 34, wherein the user interface also displays a selectable view service description button that, when selected, causes the generic user control point tool to open a service description viewer window for browsing the service description document, the service description viewer window being different than first window used to display the user interface.

36. (New) A generic user control point tool as recited in claim 35, wherein the service description viewer window displays a selectable button, that when selected causes the generic user control point tool to display the service description document.

37. (New) A generic user control point tool as recited in claim 34, wherein the user interface displays a query button that, when selected, causes the user interface to determine and display a value associated with a selected variable corresponding to a service selected from the list of services.

38. (New) A generic user control point tool as recited in claim 37, wherein the user interface displays a selectable list of variables from which the selected variable is selected.

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39. (New) A generic user control point tool as recited in claim 34, wherein the user interface displays an invoke action button that, when selected, causes the user interface to invoke a selected action for a service selected from the list of services.

40. (New) A generic user control point tool as recited in claim 39, wherein the user interface displays a selectable list of actions that can be invoked and from which the selected action is selected.

41. (New) A generic user control point tool as recited in claim 40, wherein the user interface includes a field that displays arguments corresponding to the selected action.

42. (New) A generic user control point tool as recited in claim 27, wherein the user interface displays a presentation button that, when selected, causes the user interface to access and load a browser and then to access and load a UPnP device manufacturer's presentation user interface with the browser according to a URL of a UPnP device selected from the list of selectable UPnP devices.

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43. (New) A method for discovering, controlling, and displaying Universal Plug and Play (UPnP) devices on a system using a generic user control point tool, the method comprising:
displaying a user interface with the generic user control point tool in a first window;

displaying at the user interface a plurality of selectable search type options that correspond to different types of searches for discovering UPnP devices on the system;

in response to user selection of any of the selectable search type options, collecting UPnP device information corresponding to compliant UPnP devices on the system; and

displaying the compliant UPnP devices in a selectable list at the user interface.

44. (New) A method as recited in claim 43, wherein the plurality of selectable search type options include a find by type search option for searching by type of UPnP device, a find by unique device name (UDN) search option for finding UPnP devices by unique name and an asynchronous search option for finding all UPnP compliant devices on the system.

45. (New) A method as recited in claim 43, wherein collecting UPnP device information includes sending a multicast discovery message to UPnP devices with search criteria.

46. (New) A method as recited in claim 45, wherein compliant UPnP devices on the system respond to the multicast message when embedded devices or services of the compliant UPnP devices match the search criteria included in the multicast discovery message.

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47. (New) A method as recited in claim 43, further comprising:
- displaying a selectable properties button, at the user interface, corresponding to properties of UPnP devices; and
 - displaying properties corresponding to a selected UPnP device when the selected UPnP device is selected from the list and when the selectable properties button is selected.
48. (New) A method as recited in claim 47, wherein the properties are displayed in a separate window from the first window.
49. (New) A method as recited in claim 47, further comprising:
- displaying a list of services available to the selected UPnP device, when the selectable properties button is selected, and
 - displaying a URL to a service description document when information is available for the services of the selected UPnP device in the service description document.
50. (New) A method as recited in claim 49, further comprising:
- displaying a selectable view service description button that, when selected, causes the generic user control point tool to open a service description viewer window for browsing the service description document, the service description viewer window being different than first window used to display the user interface.

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51. (New) A method as recited in claim 47, further comprising:
- displaying a query button that, when selected, causes the user interface to determine and display a value associated with a selected variable corresponding to a service selected from the list of services, and
 - displaying a selectable list of variables from which the selected variable is selected.
52. (New) A method as recited in claim 47, further comprising:
- displaying an invoke action button;
 - displaying a selectable list of actions corresponding to a service selected from the list of services; and
 - invoking a selected action in response to user input selecting one of the actions and the invoke action button.
53. (New) A method as recited in claim 52, further comprising displaying, at the user interface, arguments corresponding to the selected action.

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54. (New) A method as recited in claim 43, further comprising:
- displaying a presentation button; and
 - in response to user selection of the presentation button, performing the following:
 - accessing and loading a browser; and
 - accessing and loading a UPnP device manufacture's presentation user interface with the browser according to a URL of a UPnP device selected from the list of selectable UPnP devices.